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AZ CORP COMMISSION  
DOCKET CONTROL

April 1, 2016

Docket Control  
Arizona Corporation Commission  
1200 W. Washington Street  
Phoenix, AZ 85007

RE: Arizona Public Service Company  
2015 Renewable Energy Standard Annual Compliance Report  
Docket No. E-00000R-16-0084

Pursuant to Arizona Administrative Code R14-2-1812(A), Arizona Public Service Company (APS or Company) is required to file an annual report detailing its compliance with the Renewable Energy Standard (RES) rules:

Beginning April 1, 2007, and every April 1<sup>st</sup> thereafter, each Affected Utility shall file with Docket Control a report that describes its compliance with the requirements of these rules for the previous calendar year. The Affected Utility shall also transmit to the Director of the Utilities Division an electronic copy of this report that is suitable for posting on the Commission's website.

Pursuant to Commission Decision No. 72022, APS is also required to submit a summary of the RES Compliance Report and a PowerPoint presentation.

Attached please find the Company's 2015 RES Compliance Report, Report Summary, and PowerPoint presentation. An electronic copy of the RES Compliance Report will also be provided to Staff's Utilities Division Director. Competitively confidential information contained in the Report and native Excel files will be submitted to Staff separately pursuant to an executed Protective Agreement.

If you have any questions, please contact me at (602) 250-3341.

Sincerely,

Kerri A. Carnes

KC/bgs

c: Tom Broderick (via e-mail with file for publication)  
Terri Ford  
Barbara Keene

Arizona Corporation Commission

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**Arizona Public Service Company**  
**2015 Renewable Energy Standard (RES) Compliance Report**  
**Summary**

In 2015, renewable generation installed in APS's service territory produced 3,082,451 MWh, comprising **11.0 percent** of APS's 2015 retail sales. This amount includes energy from installations for which incentives were not available and is provided for informational purposes only; APS's compliance with the RES requirements is discussed below.

*APS 2015 Renewable Compliance Requirements*

For calendar year 2015, the Arizona Corporation Commission (Commission) established an annual RES requirement of 5.0 percent of the utility's 2015 retail kilowatt-hour (kWh) sales, a total of 1,397,442 MWh. Additionally, 30 percent of the total requirement (419,233 MWh) is to be fulfilled with energy produced from Distributed Energy (DE) resources. This separate DE carve-out provision requires one half of the total DE requirement (209,616 MWh) to come from residential resources and one half from non-residential resources. For the purposes of RES compliance tracking, a Renewable Energy Credit (REC) is defined as a kWh derived from eligible renewable resources or kWh equivalent of conventional resources displaced by distributed resources;<sup>1</sup> however, throughout the Compliance Report APS discloses its production in MWh.

Additionally, the Company's 2009 Rate Case Settlement Agreement (2009 Settlement)<sup>2</sup> adopted provisions that exceed the requirements of the RES. The 2009 Settlement required APS to, among other provisions, acquire renewable energy resources with annual generation or savings of 1,700,000 MWh to be in service by December 31, 2015. It further states that the new resources are to be in addition to existing resources or commitments as of the end of 2008. As of December 31, 2015, APS's post-2008 resources were 1,706,821 MWh.

*APS 2015 RES Performance*

In 2015, the Company's total RES resources available to meet compliance were 2,835,779 MWh, which is **10.1 percent** of APS's total 2015 retail sales. Total DE energy production for the year reached 760,336 MWh. Total Residential Distributed Generation performance was **137 percent** of the requirement for 2015 and Non-Residential Distributed Generation performance was **226 percent** of the requirement.

*Renewable Generation Resources*

In 2015, as part of the AZ Sun Program, the Luke Air Force Base solar plant (10 MWac) and Desert Start solar plant (10 MWac) reached commercial operation.

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<sup>1</sup> A.A.C. R14-2-1801(N).

<sup>2</sup> Decision No. 71448 (December 30, 2009).

### *Distributed Energy Resources*

In 2015, 84 MWdc of new DE systems were installed (approximately 74 MWdc of residential and 10 MWdc of non-residential). A total of 9,436 residential installations (9,329 PV Grid-Tied, 104 Solar Water Heating and 3 other technologies) were completed in 2015. Among non-residential customers a total of 104 installations (96 PV Grid-Tied and 8 other technologies) were completed in 2015. At the end of 2015, approximately 560 MWdc of cumulative DE capacity had been installed in APS service territory.

Of the 9,540 installations that took place in 2015, 9,426 were installed without receiving an incentive (9,329 residential and 97 non-residential).

### *RES Workplan*

For the 2015 budget year, the Company received authorization for a total RES budget of \$151.8 million.<sup>3</sup> After offsetting funding, the Renewable Energy Adjustment Charge was authorized to collect approximately \$121.8 million. For customers without a DG system, those that installed a DG system prior to July 1, 2012 and those that installed a DG system after July 1, 2012 but before February 1, 2013 and did not receive an incentive, the monthly surcharge was \$0.011060/kWh, up to a monthly cap of \$4.42 for residential, \$164.32 for small non-residential, \$276.50 for medium non-residential customers, \$553.00 for large non-residential and \$3,594 for industrial customers.

For customers who installed a DG system and received a direct cash incentive beginning July 1, 2012, and those who install a DG system and interconnect with the APS distribution system beginning February 1, 2013, regardless of incentive, the monthly charges for 2015 were \$3.99 for residential, a monthly minimum of \$9.40 for extra small non-residential with a surcharge cap of \$164.32, a monthly minimum of \$46.18 for small non-residential with a surcharge cap of \$164.32, \$241.42 for medium non-residential, \$531.93 for large non-residential and \$3,594 for industrial customers.

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<sup>3</sup> Decision No. 74949 (February 9, 2015).

# **Arizona Public Service Company 2015 Renewable Energy Standard Compliance Report**

April 1, 2016



# 2015 Renewable Energy

- In 2015, renewable generation installed in APS's service territory, including energy from installations in which an incentive was not provided, totaled **3,082,451 MWh**, which is **11.0 percent** of APS's 2015 retail sales.

# Regulatory Commitments

- Arizona's Renewable Energy Standard (RES)
  - 5.0 percent of APS's 2015 retail kWh sales are required to be generated from renewable resources, with 30 percent of that 5.0 percent coming from Distributed Energy (DE) resources
- 2009 APS Rate Case Settlement Agreement
  - Required APS to acquire an additional 1.7 GWh of renewable energy in addition to existing resources or commitments as of the end of 2008

# 2015 Performance vs RES Targets

Category	Metric	%	Compliance Measure (MWh)	RES Resources (MWh)	% of Requirement
2015 Total RES Requirement	% of Retail Sales	5.0%	1,397,442	2,835,779	203%
Distributed Energy RES Requirement	% RES Requirement	30%	419,233	760,336	181%
Residential DE Requirement	% of DE Requirement	50%	209,616	286,965	137%
Non-Residential DE Requirement	% of DE Requirement	50%	209,616	473,370	226%

***APS is exceeding compliance with all RES requirements***

# New Renewable Energy

- Distributed Energy
  - 84 MWdc of new DE systems were installed in 2015
    - About 74 MWdc (including 9,329 PV Grid Tied installations) of residential and 10 MWdc (including 96 PV Grid Tied installations) of non-residential DE capacity was installed
    - This results in 560 MWdc of cumulative installed DE capacity in APS's service territory (through the life of the program)
  - Of the 9,540 total installations that took place in 2015, 9,426 were installed without receiving an incentive
- Renewable Generation
  - APS-owned AZ Sun Program
    - Desert Star Solar Plant (10 MWac)
    - Luke Air Force Base Solar Plant (10 MWac)





# **2015 RENEWABLE ENERGY STANDARD COMPLIANCE REPORT**

**April 1, 2016**

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In 2015, renewable energy resources on the APS system, including rooftop solar installations for which an incentive was not received, produced 3,082,451 MWh. This is equivalent to nearly **11.0 percent** of APS's 2015 retail sales. APS's renewable energy portfolio and compliance with the Renewable Energy Standard (RES) are discussed below.

## **I. 2015 Renewable Energy Standard (RES) Results**

### **A. Compliance with RES Requirements**

For calendar year 2015, the Arizona Corporation Commission (Commission) required through its RES Rules that 5.0 percent of the utility's 2015 retail kilowatt-hour (kWh) sales come from renewable resources, with 30 percent of the total requirement to be fulfilled with energy produced from Distributed Energy (DE) sources. This separate DE carve-out provision requires half of the total DE requirement to come from residential sources and half from non-residential sources. A summary of APS's 2015 compliance is shown in Table 1a. Under the RES Rules, compliance to the RES is measured using Renewable Energy Credits (RECs). For the purposes of RES compliance tracking, a REC is defined as the environmental attributes associated with a kWh of energy derived from eligible renewable resources or the kWh equivalent of conventional resources displaced by distributed resources, however, throughout the Compliance Report APS discloses its production in megawatt-hours (MWh).<sup>1</sup>

Table 1a (see page 2) demonstrates APS compliance with its 2015 requirements and Table 1b (see page 3) reports on total RES resources on the APS system as of the end of 2015. In 2015, the Company's total RES resources available for compliance totaled 2,835,779 MWh, which is **10.1 percent** of APS's total 2015 retail sales. Total DE energy production for the year reached 760,336 MWh. Total Residential performance was **137 percent** of the requirement for 2015 and Non-Residential performance was **226 percent** of the requirement.

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<sup>1</sup> A.A.C. R14-2-1801(N).

**Table 1a - 2015 Compliance Summary**

Category	Metric	%	Compliance Measure (MWh)	RES Resources (MWh or Equivalent)	
Retail Sales	Actual MWh Sales for 2015		27,948,843		
Prior year carrying balance <sup>1</sup>				<b>3,213,015</b>	(I)
2015 Total RES Resources [From (H) in Table 1b]				<b>2,835,779</b>	(J)
2015 Total RES Requirement	% of Retail Sales	5.0%	1,397,442		
DE Requirement	% of RES Requirement	30%	419,233		
DE Sub-Requirements:					
Residential DE	% of DE Requirement	50%	209,616	286,965	(K)
Non-Residential DE	% of DE Requirement	50%	209,616	473,370	(L)
Non-DE Target				637,107	(M)
Resources Used for 2015 Compliance ( K + L + M )				<b>1,397,442</b>	(N)
End 2015 carrying balance ( I + J - N )				<b>4,651,351</b>	(O)

Notes to Table 1a:

<sup>1</sup>The RES-eligible resource carrying balance is accounted for using First-In-First-Out (FIFO) methodology, wherein the entire carrying balance is applied to the RES requirement and the year-end carrying balance consists of current year remaining resources.

Additionally, the Company's 2009 Rate Case Settlement Agreement (2009 Settlement) adopted provisions that exceed the requirements of the RES.<sup>2</sup> The 2009 Settlement required APS to, among other provisions, acquire energy resources with annual generation or savings of 1,700,000 MWh to be in service by December 31, 2015. The new resources are to be in addition to existing resources or commitments as of the end of 2008. As of December 31, 2015 APS's post-2008 resources totaled 1,706,821 MWh.

## B. Installed Resources

An overview of APS's total installed portfolio as of the end of 2015 is provided in Table 1b. The table includes projects installed to date from prior calendar years, accounting adjustments for RES eligibility standards, including the subtraction of Green Choice sales, the expected annual production from DE systems installed in 201523, a multiplier applied to in-state solar installations completed by end of year 2005, and the inclusion of wholesale DE purchases.<sup>3</sup>

<sup>2</sup> Decision No. 71448 (December 30, 2009).

<sup>3</sup> Resources eligible to be counted as Wholesale Distributed Generation, as defined by A.A.C. R14-2-1802, include renewable resources owned by a third party and interconnected at 69kV or lower.

Table 1b - Renewable Resources

Resource	Technology	Ownership	MWac <sup>1</sup>	MWdc <sup>1</sup>	Production (Actual)	Production (Annualized) <sup>2</sup>	Multiplier Credits	Total MWh or Equivalent
<b>GENERATION:</b>								
Aragonne Mesa	Wind	3rd Party PPA	90		236,847			236,847
High Lonesome	Wind	3rd Party PPA	100		243,509			243,509
Perrin Ranch	Wind	3rd Party PPA	99		191,913			191,913
Snowflake White Mountain Power	Biomass	3rd Party PPA	14		100,901			100,901
Sexton (Glendale Landfill)	Landfill Gas	3rd Party PPA	3		19,295			19,295
Northwest Regional Landfill Gas	Landfill Gas	3rd Party PPA	3		22,855			22,855
Salton Sea/CE Turbo	Geothermal	3rd Party PPA	10		73,874			73,874
Ajo	Solar PV	3rd Party PPA	5		9,219			9,219
Badger 1 Solar	Solar PV	3rd Party PPA	15		39,707			39,707
Gillespie 1 Solar	Solar PV	3rd Party PPA	15		42,787			42,787
Prescott	Solar PV	3rd Party PPA	10		25,618			25,618
Saddle Mountain	Solar PV	3rd Party PPA	15		35,827			35,827
AZ Sun: Chino Valley	Solar PV	APS	19		46,476			46,476
AZ Sun: Cotton Center	Solar PV	APS	17		42,798			42,798
AZ Sun: Foothills I/II	Solar PV	APS	35		110,820			110,820
AZ Sun: Hyder I	Solar PV	APS	16		42,004			42,004
AZ Sun: Hyder II	Solar PV	APS	14		43,826			43,826
AZ Sun: Paloma	Solar PV	APS	17		39,257			39,257
AZ Sun: Gila Bend	Solar PV	APS	32		104,802			104,802
AZ Sun: Luke AFB	Solar PV	APS	10		18,441			18,441
AZ Sun: Desert Star	Solar PV	APS	10		14,817			14,817
Small Solar Projects	Solar PV	APS	4		7,443		3,721	11,164
Solana CSP	Solar CSP	3rd Party PPA	250		718,834			718,834
Gross Total			803	-	2,231,870	-	3,721	2,235,591
Adjustments								
	Special Contracts <sup>7</sup>				(40,095)			(40,095)
	Green Choice Sales				(78,129)			(78,129)
	Wholesale DE Allocation				(41,923)			(41,923)
<b>Subtotal Generation</b>			<b>803</b>		<b>2,071,722</b>		<b>3,721</b>	<b>2,075,443</b> (A)
<b>DISTRIBUTED ENERGY (DE):</b>								
<i>Residential:</i>								
UFI Installations <sup>3</sup>	Various	Customer-Sided DE	132	155	234,953	51,292		286,245
Non Incentive Installations	Solar PV	Customer-Sided DE	109	128	84,157	124,405		208,561
Flagstaff Community Power Project	Solar PV	APS	0.4	0.5	720			720
Gross Total			241	283	319,830	175,697		495,527
<b>Subtotal Residential</b>			<b>241</b>	<b>283</b>	<b>319,830</b>	<b>175,697</b>		<b>495,527</b> (B)
<i>Non-Residential:</i>								
UFI Installations <sup>3</sup>	Various	Customer-Sided DE	13	15	23,089	13,377		36,465
PBI Installations <sup>3</sup>	Various	Customer-Sided DE	116	136	219,686	734		220,420
Non Incentive Installations	Solar PV	Customer-Sided DE	20	23	7,572	30,539		38,111
DE RFP <sup>4</sup>	Solar PV	Customer-Sided DE	38	45	76,665			76,665
Schools & Government (3rd-Party Owned)	Solar PV	Customer-Sided DE	36	42	71,512	2,220		73,731
Schools & Government (Utility-Owned)	Solar PV	APS	13	15	22,689			22,689
Flagstaff Community Power Project	Solar PV	APS	0.9	1.1	1,477			1,477
Gross Total			235	277	422,689	46,869		469,558
Wholesale DE			n/a	n/a	41,923			41,923
<b>Subtotal Non-Residential</b>			<b>235</b>	<b>277</b>	<b>464,612</b>	<b>46,869</b>		<b>511,481</b> (C)
<b>Subtotal Distributed Energy (B+C)</b>			<b>476</b>	<b>560</b>	<b>784,442</b>	<b>222,566</b>		<b>1,007,008</b> (D)
<b>Total Renewable Energy Resources (A+D)</b>					<b>2,856,164</b>	<b>222,566</b>	<b>3,721</b>	<b>3,082,451</b> (E)
<b>Total MWac equivalent<sup>5</sup></b>			<b>1,279</b>					
<b>Total Non Incentive Energy Resources</b>					<b>91,729</b>	<b>154,943</b>		<b>246,672</b> (F)
<b>Total Non Incentive MWac equivalent</b>			<b>128</b>					
<b>Total RES Resources<sup>6</sup> (E-F)</b>					<b>2,764,435</b>	<b>67,622</b>	<b>3,721</b>	<b>2,835,779</b> (H)
<b>Total MWac equivalent<sup>5</sup></b>			<b>1,151</b>					

Notes to Table 1b:

<sup>1</sup> Generation capacity is reported in MWac and DE is generally reported in MWdc.<sup>2</sup> Assumes an average of 1,640 kWh per installed kW for non-metered or current year installed residential PV systems, and metered average kWh per installed kW for non-residential systems, by nonresidential segment.<sup>3</sup> Includes energy for all installations, but only notes capacity for solar electric and wind installations.<sup>4</sup> Approved PBI program per Decision Nos. 70313 and 71459.<sup>5</sup> Represents the total RES portfolio capacity in MWac. Assumes a 85% dc-ac conversion factor applied to MWdc capacity.<sup>6</sup> Total RES Resources does not include energy from non-incentive installations which may be considered for compliance in future years.<sup>7</sup> Energy sold through Special Contracts has been removed from Distributed Generation totals

## **1. Renewable Generation Resources**

The Company's portfolio of Renewable Generation (RG) energy encompasses grid-scale renewable resources.<sup>4</sup>

In 2015, as part of the AZ Sun Program, the Luke Air Force Base solar plant (10 MWac) and Desert Star solar plant (10 MWac) reached commercial operation.

## **2. Distributed Energy Resources**

In 2015, 84 MWdc of new DE systems were installed (approximately 74 MWdc of residential and 10 MWdc of non-residential). A total of 9,436 residential installations (9,329 PV Grid-Tied, 104 Solar Water Heating and 3 other technologies) were completed in 2015. Among non-residential customers, a total of 104 installations (96 PV Grid Tied and 8 other technologies) were completed in 2015. At the end of 2015, approximately 560 MWdc of cumulative DE capacity had been installed in the APS service territory.

Of the 9,540 installations in 2015, 9,426 were installed without receiving an incentive (9,329 residential and 97 non-residential).

## **II. 2015 RES Workplan**

Each year, APS develops a total renewable energy program budget based on estimated expenses for renewable generation and distributed energy programs and projects. Revenues to offset these expenses are collected through both the RES Adjustor and base rates. Revenue collected in a prior year that has been accrued and designated to offset expenses in the current year is also available. As shown in the top section of Table 2a, total available funding in 2015 was approximately \$159 million.

The Renewable Energy Standard Adjustment Schedule (REAC-1) collects funds for the RES programs based on a per kWh charge, with a cap on monthly charges that varies by customer class.<sup>5</sup> For customers without a DG system, those that installed a DG system prior to July 1, 2012 and those that installed a DG system after July 1, 2012, but before February 1, 2013, and did not receive an incentive, the 2015 monthly surcharge was \$0.011060/kWh, up to a monthly cap of \$4.42 for residential, \$164.32 for small non-residential, \$276.50 for medium non-residential customers, \$553.00 for large non-residential and \$3,594 for industrial customers.

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<sup>4</sup> APS defines Renewable Generation as renewable resources interconnected on the utility side of the meter. Renewable Generation resources are generally grid-scale projects and apply to the RES total production requirement.

<sup>5</sup> For additional information on REAC-1 see Decision Nos. 73183, 73660, 73636, and 74949.

For customers who installed a DG system and received a direct cash incentive beginning July 1, 2012, and those who install a DG system and interconnected with the APS distribution system beginning February 1, 2013, regardless of incentive, the monthly cap for 2015 was \$3.99 for residential, a minimum charge of \$9.40 for extra small non-residential with a surcharge cap of \$164.32, a minimum charge of \$46.18 for small non-residential with a surcharge cap of \$164.32, \$241.42 for medium non-residential, \$531.93 for large non-residential and \$3,594 for industrial customers.

**Table 2a:**  
**2015 RES Associated Revenues and Costs**

**Collected (Revenues)**

System Benefit Charge (SBC) Revenue <sup>1</sup>	\$ 6,000,000
Renewable Energy Standard (RES) Revenue & Other <sup>2</sup>	114,093,797
<i>Subtotal: 2015 Collections</i>	<i>120,093,797</i>

2014 Committed Accrual <sup>3</sup>	2,548,875
Prior Years Collected and Unallocated Funds	36,596,848
<i>Subtotal: Prior Year Funds</i>	<i>39,145,723</i>

**Total: Available Revenue** \$ 159,239,520

**Expenses (Costs)**

*Energy/Incentives*

Renewable Generation Purchased Power <sup>4</sup>	\$ 44,104,791
Paid Distributed Energy Incentives <sup>5</sup>	35,375,956
Committed Distributed Energy Incentives <sup>6</sup>	435,521
<i>Subtotal: Energy and Incentives</i>	<i>\$ 79,916,268</i>

*Non-Energy Costs*

Administration & Implementation	5,499,379
Research, Commercialization & Integration	411,368
Customer Outreach and Awareness Programs	47,795
<i>Subtotal: Non-Energy Costs</i>	<i>\$ 5,958,543</i>

*APS Owned Program Costs*

Flagstaff CPP Revenue Requirement	200,012
AZ Sun Revenue Requirement (net of PTC)	32,108,565
Schools and Government Revenue Requirement	5,213,300
<i>Subtotal: APS Owned Program Costs</i>	<i>\$ 37,521,877</i>

**Total: Expenses** \$ 123,396,687

Net Balance	\$ 35,842,833
2015 RES Program Offset <sup>7</sup>	\$ (14,000,000)
<i>Unallocated Balance</i>	<i>\$ 21,842,833</i>

*Notes to Table 2a:*

<sup>1</sup> Collected from base rates.

<sup>2</sup> Collected as part of the environmental surcharge and other miscellaneous 2015 program related receipts.

<sup>3</sup> Balance of Up-front Incentives reservations issued but not yet paid as of year-end 2014.

<sup>4</sup> Includes \$44.9M in costs less \$(765k) Green Choice revenue collections.

<sup>5</sup> Incentives paid in 2015 (including installations before current program year but processed for payment in 2015).

<sup>6</sup> Balance of Up-front Incentives reservations issued but not yet paid as of year-end.

<sup>7</sup> Unallocated funds designated to offset 2015 budget, for more information see Decision No. 74237.



## A. Resource Costs

Pursuant to A.A.C. R-14-2-1812(b)(5), APS is required to report on any above-market, utility-scale power purchase expenditures as well as cash incentive payments by technology. Actual costs are competitively confidential and have been redacted, but will be provided to Commission Staff pursuant to a Protective Agreement in this matter. Table 2b reflects actual 2015 expenses for projects reaching commercial operation in multiple prior years and is not reflective of current market pricing.<sup>6</sup>

**Table 2b - RES Resource Costs <sup>1</sup>**

2015 RES-Attributable Energy Costs (Above Market - Utility Scale)				COMPETITIVELY CONFIDENTIAL <sup>2</sup>	
Technology	MW	MWh	RES Cost (\$/MW) <sup>2</sup>	RES Cost (\$/MWh) <sup>2</sup>	Total RES Cost <sup>2</sup>
Wind	289	672,269			
Biomass <sup>3</sup>	14	100,901			
Landfill Gas	6	42,150			
Geothermal	10	73,874			
Solar PV PPA <sup>4</sup>	60	153,158			
Solar CSP	250	718,834			
<b>2015 RES-Attributable Energy Costs (Above Market - Utility Scale)</b>				<b>\$</b>	<b>42,570,219</b>

Notes to Table 2b:

<sup>1</sup>Includes only 2015 program year costs incurred under new and legacy projects within the RES budget and is not comparable to a levelized cost of energy.

<sup>2</sup>Redacted due to the competitively confidential nature of the information.

<sup>3</sup>Includes gross generation, and does not adjust for Wholesale DE allocations.

<sup>4</sup>Does not include Purchase Power Agreements from Distributed Energy sources.

<sup>6</sup> Invoice costs do not include associated system integration costs for these resources.

**Table 2c - RES Cash Incentive Costs**

**Distributed Energy Up Front Incentive Program Costs for the 2015 Solar Water Heating Program**

	MW	MWh <sup>2</sup>	Up-Front Incentives		2015 Program Incentives (\$) <sup>4</sup>
			(\$/MW)	(\$/MWh) <sup>3</sup>	
<u>Solar Water Heating<sup>1</sup></u>					
Residential:	N/A	160	N/A	\$ 288	\$ 46,093
Non-Residential:	N/A	-	N/A	\$ -	\$ -

**Distributed Energy Production Based Incentive Program Costs for Systems Paid in 2015**

	MW	MWh <sup>5</sup>	Production-Based Incentives		Total Incentives Paid (\$)
			(\$/MW)	(\$/MWh)	
Solar Electric	200	329,827	\$ 164,609	100	\$ 32,932,546
Combined Heat & Power	0.3	507	\$ 30,301	17	\$ 8,848
Solar Water Heating	N/A	2,764		137	\$ 379,951
Solar HVAC	N/A	3,601		209	\$ 753,173
<i>Subtotal: Production Based Incentives</i>	<i>200</i>	<i>336,700</i>			<i>\$ 34,074,517</i>

*Notes to Table 2c:*

<sup>1</sup>Incentives offered in 2015 were for Solar Water Heating systems in the amount of \$0.30 per first year kWh offset. Some incentives may be less than \$0.30 due to de-rating resulting from the program inspection.

<sup>2</sup>Includes energy installed in calendar year 2015 (estimated annual system offset)

<sup>3</sup>Reflects 2015 incentive dollars divided by associated MWh.

<sup>4</sup>Amounts do not include incentives for systems installed prior to 2015.

<sup>5</sup>Includes annualized energy produced for installations through 2015.

## B. Residential and Non-Residential Incentive Program

Some systems installed in 2015 were associated with incentive programs from prior years. The only incentive program in 2015 was for residential and non-residential solar water heating systems at the incentive level of \$0.30/kWh.

### **C. Green Choice Rate Program**

In 2015, APS continued its three existing Green Choice rate offerings which were initially approved by the Commission in Decision No. 71276 in September 2009.<sup>7</sup> Participating customers pay a premium on their bills based on actual energy produced at Renewable Generation facilities that are part of the APS Green Choice portfolio. GPS-1 provides a fixed level of renewable-generated power that the customer subscribes to each month in 100 kWh blocks. GPS-2 varies month to month by customer and is based on a percentage of a customer's monthly usage. Finally, GPS-3 is a single block of renewable-generated power a customer would typically purchase so that they can market a special event as powered by green energy.

The revenue associated with the Green Choice rates ultimately supports the development of additional renewable resources. Green Choice sales are subtracted from total Renewable Generation, and do not count toward compliance with RES targets. All Green Choice renewable energy sold under APS's GPS-1, GPS-2, and GPS-3 rate plans are certified through Green-e, a national certification and verification program for renewable energy. In 2015, 2,145 customers subscribed to these rates for 78,129 MWh of sales and a total of \$764,776 in revenue.

### **III. Additional Reporting**

- Decision No. 72022 required APS to disclose whether its affiliates, employees, or directors have any financial or other interest in a renewable energy project. Affiliates, employees, or directors have no financial or other interest in any third-party owned renewable energy project within APS's portfolio.
- Decision No. 72022 required APS to list cases within the previous three calendar years where APS has received damages or other considerations as a result of non-compliance related to RES contracts. No additional damages or other considerations were realized in 2015 as a result of non-compliance related to RES contracts. Please see compliance reports for 2013 and 2014 for previous years.
- Decision No. 71958 required APS to file in its annual REST reports, in the confidential materials provided to Staff, specific data associated with APS's Bagdad Solar Agreement. APS will provide this information to Commission Staff pursuant to a Protective Agreement executed in this matter.

Decision No. 71646 required APS to provide Community Power Project - Flagstaff Pilot progress reports with its annual compliance report. APS completed the final installations associated with the Community Power Project in 2012. Updates on

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<sup>7</sup> Green Choice sales are subtracted from total Renewable Generation, and do not count toward compliance with RES targets.

production and associated costs in 2015 for the Flagstaff Community Power Project can be found in Tables 1B and 2A.

Decision No. 74823 approved the Voluntary Solar Contribution Program (VSCP or Solar Assist) and required APS provide a progress report on October 1, and as part of the annual REST Compliance Report in April.

In December 2015, a 3.12 kW sized rooftop solar system was installed on a single family Habitat for Humanity home (identified in the October 1, 2015 progress report). Payment for this installation was made in 2016. APS made an \$11,000 contribution to the fund in December 2015 to support the cost of this installation.

APS marketed the Solar Assist program through the distribution of handouts at various events.

#### 2015 Voluntary Solar Contribution Program Results

	No. Received	Reporting Period 7/1/15-12/31/15	Total
Fund Balance as of June 30, 2015	-	-	\$571.91
Contributions	2	\$11,075.00	\$11,646.91
Interest Accrued/Investment Return	-	(\$37.17)	\$11,609.74
Ending Fund Balance as of December 31, 2015	-	-	\$11,609.74

# Appendix

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## Appendix A: Schools Funded from 2009 UFI Funds -- Total Production

In Decision No. 71275, APS was required to install a production meter at every school project that received an up-front incentive (UFI) pursuant to the Decision. Further, APS was required to monitor and report the actual metered production for these systems. Appendix A lists the in-service dates and 2015 actual energy production for all schools which received UFIs in 2009 as a result of this Decision.<sup>8</sup> All schools installed photovoltaic (PV) systems.

**Schools Funded From 2009 UFI Program**

<b>In-service Date</b>	<b>Energy Produced in 2015 (kWh)</b>
11/16/2010	368,874
8/26/2010	1,600,022
2/18/2011	405,174
9/27/2010	1,097,937
7/12/2010	633,148
10/22/2010	524,587
11/1/2010	167,094
11/3/2010	1,543,543
7/2/2010	201,609
8/31/2010	813,846
11/11/2010	467,982
<b>Total kWh Production in 2015</b>	<b>7,823,816</b>

<sup>8</sup> Energy produced from schools in the 2009 UFI Program is reflected on table 1b as part of the Non-Residential UFI Installations (Production (Actual)).

## Appendix B: Independent Monitor Certifications

NAVIGANT

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February 29, 2016

VIA E-MAIL

Ms. Loretta Cordova  
Power Procurement  
Arizona Public Service  
400 N. 5th Street | MS 9674 | Phoenix, AZ 85004  
Loretta.Cordova@aps.com

Subject: CERTIFICATION OF THE ARIZONA PUBLIC SERVICE ("APS") FOR THE RED ROCK SOLICITATION

Dear Ms. Cordova:

This letter serves as a certification by Navigant Consulting, Inc. ("Navigant") concerning our review as Independent Monitor ("IM") of the procurement process performed by APS relative to the above mentioned Red Rock Solar Solicitation (the "Solicitation"). We find that this Solicitation conducted by APS was fair, transparent and unbiased, and met all requirements of the applicable Procurement Rules. Capitalized terms not defined herein are defined in our report concerning the Solicitation (the "Report").<sup>1</sup>

Under the Solicitation, APS issued a Request for Proposals ("RFP") to the public for 30-50 megawatts ("MW") of new solar power generation at a site owned by APS.<sup>2</sup>

Rules adopted by the Arizona Corporation Commission (the "Commission") specify requirements for procurement for electric load serving entities such as APS (the "Procurement Rules"). Section R14-2-706 of the Procurement Rules ("Section 706")<sup>3</sup> is pertinent to the RFP because it governs the selection of, and outlines the responsibilities of, the IM and the information that APS must submit to the IM.

APS retained Navigant to serve as the IM for the Solicitation. APS engaged the IM to review the Solicitation process and validate that it would be conducted in a fair, transparent, and unbiased manner in accordance with the applicable Procurement Rules. We do find that APS conducted this Solicitation process in a fair, transparent and unbiased manner in accordance with the applicable Procurement Rules.

Specifically, and as a result of our work, we certify to the items listed below.

- The Solicitation Documents are comprehensive and consistent with other documents for solar power supply that we have performed or observed and are consistent with the applicable Procurement Rules. The RFP sufficiently defines the specific product(s) being solicited, the milestone dates for the Solicitation process and all participation and submittal requirements. The

<sup>1</sup> Independent Monitor Report for the Red Rock Solar Solicitation, prepared for the Arizona Public Service Company by Navigant, dated January 2016.

<sup>2</sup> Arizona Public Service Company, 2015 Red Rock Solar Request for Proposal ("RFP") Amended October 20, 2015.

<sup>3</sup> Arizona Corporation Commission, Docket No. RE-00000A-09-0249, Decision No. 71722, Arizona Administrative Code ("A.A.C.") R14-2-706.


milestone dates, durations, and sequencing of the Solicitation and evaluation processes are reasonable. The type and level of information required for the Commercial Data Forms and the Technical Data Forms on PowerAdvocate is reasonable. The PowerAdvocate Q&A is also clear, consistent and valuable to Interested Parties in further defining the Solicitation. Nothing in the Solicitation Documents created a material advantage or disadvantage for any Interested Party or Respondent.

- APS performed its Proposal evaluation and subsequent selection process in a logical, unbiased and comprehensive manner consistent with other power supply offer evaluation processes we have performed or observed. The threshold process to identify conforming proposals, and the screening process to identify the least cost Proposals for further detailed evaluation were performed on a consistent and fair basis. The subsequent detailed evaluation process, including detailed quantitative modeling and detailed assessment of risk factors, was performed on a consistent and fair basis which created no material advantage or disadvantage for any Respondent.
- At this time, we have no recommendations to improve the APS solicitation process based on other industry solicitations that we have performed or observed.

This Report summarizes our review and conclusions as of the date of this Report. In performance of our review and issuance of this Report, we have not attempted to influence the evaluations performed by APS, nor the discussions between APS and the Interested Parties or Respondents, nor the selection of any proposals by APS. We have not performed any independent alternate evaluation or selection of Proposals. For our work we have relied on documents, correspondence, analyses, and other information provided to us by APS. While we believe this information to be reliable, it has not been independently verified for either accuracy or validity, and no assurances are offered with respect thereto. Similarly, we were not a party to phone conversations, meetings or other communications that APS may have had with Interested Parties or Respondents other than the messages on PowerAdvocate.

This Report concerns only the fairness and transparency of the Solicitation and evaluation processes. It does not represent any endorsement of any Proposal selected by APS, nor any guarantee that any proposal is valid or will be ultimately delivered. We make no representations, warranties or opinions concerning the enforceability or legality of the laws, regulations, rules, agreements or other similar documents reviewed as part of our work. We express no recommendation, opinion, or advice as to the wisdom, desirability, or prudence of contracting with any of the Respondents, or to the action any person should take in connection with the offer, issuance, purchase, or sale of securities or contracts related to APS or the Respondents. Navigant and its employees are independent contractors providing professional services to APS and are not officers, employees, or agents of APS.

Sincerely,



Paul D. Maxwell  
Director



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*Merrimack Energy Group, Inc*

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January 14, 2016

John Pinho, PMP

Microgrid Program Manager, Technology Assessment

Arizona Public Service Company 400 N. 5<sup>th</sup> Street, Mail Station 9172

Phoenix, AZ 85004

Re: Certification Letter of Merrimack Energy Group, Inc. as Independent Monitor for Arizona Public Service Company's ("APS") 2015 Request for Proposals ("RFP") for the Solar Partners Program (SPP) Battery Energy Storage System (BESS) RFP

Dear Mr. Pinho:

Merrimack Energy Group, Inc. ("Merrimack Energy") has served as Independent Monitor for APS's 2015 Request for Proposals (RFP) for the Solar Partners Program (SPP) Battery Energy Storage System (BESS) RFP. Through this RFP, APS sought to obtain scope, schedule and budget from selected BESS Suppliers to design, procure, construct, install and maintain the proposed BESS at the APS selected sites in Phoenix, AZ. The bidders were evaluated on their ability to perform a full scope of Engineering, Procurement, and Construction ("EPC") services as well as Maintenance (EPCM) of the BESS assets for a minimum of two (2) years. Merrimack Energy's role as IM covered the entire solicitation process and continued through the final selection of the EPC contractor.

The role of the IM in this competitive procurement process was to ensure that APS' solicitation process was conducted in a fair, transparent and unbiased manner. Merrimack Energy believes that APS did conduct the RFP in a fair, transparent and unbiased manner. The tasks and services performed by Merrimack Energy are consistent with the requirements of the Competitive Procurement Procedures ("CPP"), the Arizona Corporation Commission's Resource Planning and Procurement Rules and Scope of Work of the IM prepared by APS and agreed to and executed by both parties.

It is the opinion of the IM that the 2015 Request for Proposals (RFP) for the Solar Partners Program Battery Energy Storage System Project solicitation process and assessment was conducted in a fair, consistent, comprehensive and unbiased basis by APS. APS established procedures, rules, and criteria which guided the evaluation and selection process, and consistently applied such procedures.

Very Truly Yours,



Wayne Oliver

President

Merrimack Energy Group, Inc.

26 Shipway Place

Charlestown, Mass. 02129